

Perception of French prosodic prominence by Turkish L1 learners: An ERP study

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The acquisition of prosody in a non-native language has been shown to be challenging [8], although positive transfer from a typologically similar language may aid this process [2, 4]. French and Turkish constitute an interesting and understudied language pair in this regard: Both have been described as employing a prosodic system in which prominence can be assigned post-lexically, at the level of the Accentual Phrase (AP) in French [3] and the Prosodic Word in Turkish [5]. Previous studies have shown that violations of expected prosodic patterns in speech processing can reveal event-related potential (ERP) components such as N400 and P600 in native listeners, reflecting expectancy violations and subsequent integration processes [1, 9]. However, EEG studies with non-native listeners processing prosodic contrasts are still rare (although see [6, 7]) and little is known about how learners with different or similar prosodic backgrounds perceive deviations from French prosodic patterns. In this study, we investigate whether native speakers of Turkish who are learning French as an L3 (after having acquired English as an L2) are sensitive to prosodic deviations from French intonation patterns. The experiment uses two types of auditory stimuli that manipulate the location of prosodic prominence within a disyllabic target word (e.g., *dimanche* ‘Sunday’). Target words are either followed by a monosyllabic word that is part of the same AP (Type 1, e.g., *le dimanche soir* ‘on Sunday evening’) or they are the only content word in an AP (Type 2, e.g., *le dimanche* ‘on Sunday’). In Type 1 stimuli, the prosodic pattern that is consistent with French phrase-based intonation entails prominence on the initial syllable of the target word (i.e., *Di*manche), due to phrase-final prominence on the following word. In the non-target-like condition, prominence is realized on the final syllable of the target word (i.e., di*MANCHE*) to create a pattern resembling word-based final stress, which is not typical of French. In Type 2 stimuli, by contrast, the target word carries final prominence in the native-like condition but initial prominence in the non-native-like condition. Each of the four conditions (Type 1/Type 2 × native-like/non-native-like) contains 50 stimuli, resulting in a total of 200 trials. During EEG recording, participants ($n = 25$) will judge how closely the intonation of each sentence resembles that of a native French speaker.

If Turkish learners have successfully acquired French AP prosody, we expect them to prefer initial prominence on the target word in Type 1 stimuli and final prominence in Type 2 stimuli. Behavioral responses and ERPs will be analyzed, focusing on components associated with expectancy violations and their potential resolution in language processing (e.g., N400 and P600). In addition, participants’ musicality and working-memory capacity will be measured to examine whether individual cognitive differences modulate sensitivity to prosodic structure. Data collection will be completed in June 2026, and analysis will be completed in time for the conference.

We predict that Turkish learners will show neural and behavioral sensitivity to prosodic violations despite French not being their native language. This would suggest that similarities between the Turkish and French prosodic systems facilitate the perception of phrase-based prominence patterns. These findings will contribute to models of L3 phonological acquisition by clarifying whether cross-linguistic prosodic similarity benefits the neural processing of non-native intonation.

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